In the specification:

Please replace paragraph **[0034]** with the following amended paragraph:

[0034] Demoted code 240 may be provided to an automatic vectorizer for a signal processing or media processing instruction set. For example, many signal and media processors, as well as general-purpose processors with signal- and media-processing extensions, provide operations on vectors whose elements are of a small, fixed point data type. In such a typical ~~such~~ instruction set a vector might consist of 8 16-bit elements packed into a single 128 bit word. In order to automatically make use of such an instruction set via a compiler, it is desirable to convert operations on larger data types (typically 32 or 64 bits) into operations on the vector element type. This is made necessary by the fact that programming languages typically specify that arithmetic operations are carried out, by default, in a larger type than the vector element type provided by the signal or media processor.

Please replace paragraph **[0038]** with the following amended paragraph:

[0038] It is assumed moreover that a Bitwise Constant Propagation method as specified below may have been performed, so that for every alias a in the program, ForwardValue[a] and BackwardValue[a] exist.

Please replace paragraph **[0040]** with the following amended paragraph:

[0040] **Figure 3** illustrates a flow diagram of the process demote expression 300 performed by Expression Identifier and Demoter 220 according to one embodiment of the present invention. The process begins at block 301. Decision block 305 determines if vector element s is less than t. If s is not less than t, then flow returns to start block 301. If s is less than t, then flow continues to decision block 310. At decision block 310, if Leftmost1(BackwardValue[a].zero | BackwardValue[a].one) <= s, then flow continues to decision block 315. If Leftmost1(BackwardValue[a].zero | BackwardValue[a].one) > s then flow returns to start bloack block 301.

Please replace paragraph [0045] with the following amended paragraph:

[0045] The process ends at stop block 399. This process has the effect of replacing an OP that operates on t bits by an OP that operates on s bits. Note that the procedure is independent of OP; it depends only on the backward values of OP's inputs and output.

Please replace paragraph [0048] with the following amended paragraph:

[0048] The process ends at stop block 499. This procedure reduces the precision of a variable from t bits to s bits.